- Put your ID card on your desk
- You are not allowed to leave
- Cheating is strictly prohibited

You are being supervised

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Timed Test   This test has a time limit of 1 hour. This test will save and submit automatically when the time expires.
Warnings appear when **half the time**, **5 minutes**, **1 minute**, and **30 seconds** remain.

Multiple Attempts   Not allowed. This test can only be taken once.

Force Completion   This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.
Your answers are saved automatically.

Remaining Time: **59 minutes, 33 seconds.**

⌄ Question Completion Status:

⚠ Moving to another question will save this response.

Question 1

Describe 2 ways of simplifying a Boolean expression described in a truth table.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph   ∨   Arial   ∨   10pt

B   I   U   S

P

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

Instructions
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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test. Your answers are saved automatically.

▼ 🟢

Remaining Time: 59 minutes, 19 seconds.

� **Question Completion Status:**

⚠️ Moving to another question will save this response.

Question 2

The value of conversion of (0.6875) in base 10 to binary is _____.

- ⭕ (1011)
- ⭕ (1101)
- ⭕ (0.1011)
- ⭕ (0.1101)

⚠️ Moving to another question will save this response.

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• Cheating is strictly prohibited

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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.
Your answers are saved automatically.

Remaining Time: 59 minutes, 05 seconds.

≽ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 3

Perform and explain the following subtraction on the given binary numbers using the 2's complement of the subtrahend from spend.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph	Arial	10pt

B I U S

P

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test. Your answers are saved automatically.

Remaining Time: 58 minutes, 48 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 4

"This establishes the two identity elements, 1 for (+) and 0 for (.)."

○ True
○ False

⚠ Moving to another question will save this response.

Exam Duration: 60 Minutes

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28/10/2021 at 8:30 PM

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test. Your answers are saved automatically.

Remaining Time: 58 minutes, 37 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 5

Literal is a single variable within a term that may or may not be complemented.
- ○ True
- ○ False

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Your answers are saved automatically.

Remaining Time: 57 minutes, 47 seconds.

⚠ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 6

Adjacency between cells in K-maps is related to grey code.
- ○ True
- ○ False

⚠ Moving to another question will save this response.

HUAWEI

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Remaining Time: 57 minutes, 34 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 7

The complexity of the logic gate level design depends on the complexity of the Boolean expression.

○ True
○ False

⚠ Moving to another question will save this response.

Questions Type		questions
MCQ		10 (10x0.5 =5 marks)
T/F		10 (10x0.5=5 marks)
Essay		5 (5*3=15 marks)
		Total : 25 marks

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▼ ▬▬▬

Remaining Time: 57 minutes, 19 seconds.

⦆ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 8

"Which of the following Boolean equations is in the form of product of maxterms of the function f(A,B,C)"

○ $F = (A'B\ C)\ (A\ B\ C')\ (A\ B\ C)$

○ $F = (A' + B + C')\ (A' + C)\ (A + B' + C)$

○ $F = (A + B + C)\ (A' + B + C)\ (A + B' + C)$

○ $F = A\ B'\ C + A'\ BC' + A'\ B'\ C'$

⚠ Moving to another question will save this response.

Course Title: Digital Logic

Exam Duration: 60 Minutes

28/10/2021 at 8:30 PM

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Your answers are saved automatically.

Remaining Time: 57 minutes, 06 seconds.

⌄ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 9

"The decimal number 326 is represented in BCD with 9 bits, 011 010 110, with each group of three bits representing one
- ○ True
- ○ False

⚠ Moving to another question will save this response.

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Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Remaining Time: 56 minutes, 55 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 10

"After applying the adequate theorems, the simplified expression of $F = (YZ + XYZ + XYZ + XYZ)$ is _____

- ○ X'Z+XZ
- ○ Y'(X'Z) + Y(X'Z) + Y'(XZ) + Y(XZ)
- ○ YZ' + XZ
- ○ Z

⚠ Moving to another question will save this response.

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Questions Type	Questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

Instructions

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Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.

Your answers are saved automatically.

Remaining Time: 55 minutes, 57 seconds.

⬇ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 11

_____ is the compliment of the function: $f = a'bc' + a'b'c$.

- ○ $(a' + b'+ c')(a'+ b' + c')$
- ○ $(a + b'+ c)(a + b + c')$
- ○ $(a\ b'c) + (a\ b\ c')$
- ○ $(a\ b'c)(a + b + c')$

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
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Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test Your answers are saved automatically.

Remaining Time: 55 minutes, 47 seconds.

⌄ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 12

Using 0s in K-map for the function F will result in _____

- ○ sum of product of F
- ○ product of sum of F
- ○ sum of product of the complement of F
- ○ product of sum of the complement of F

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.
Your answers are saved automatically.

Remaining Time: 55 minutes, 35 seconds.

⌄ Question Completion Status:

⚠ Moving to another question will save this response.

Question 13

Any Boolean function can be implemented using XOR function.

○ True
○ False

⚠ Moving to another question will save this response.

Timed Test   This test has a time limit of 1 hour.This test

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Warnings appear when **half the time**, 5 m   Display Video   time expires.

Multiple Attempts   Not allowed. This test can only be taken once.

Force Completion   This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.

Your answers are saved automatically.

Remaining Time: 54 minutes, 42 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 14

Using Boolean Algebraic manipulations, minimize the following function to minimum number of literals in sum of products representation. Show your work clearly by mentioning the used properties of Boolean Algebra:

$$F = A'B' + B'C + AB'C + AB$$

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

10pt   Arial   Paragraph

B   I   U   S

P

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test. Your answers are saved automatically.

Remaining Time: 54 minutes, 26 seconds.

≫ Question Completion Status:

⚠ Moving to another question will save this response.

Question 15

The K-map for a function with 3 variables contains _____

○ 3 squares
○ 6 squares
○ 8 squares
○ 9 squares

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Remaining Time: 53 minutes, 54 seconds.

⌄ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 16

X⊕Y=XY' + X'Y which means X or Y but not both.

○ True
○ False

⚠ Moving to another question will save this response.

Exam Duration: 60 Minutes

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

Instructions

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Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue running if you leave the test. Your answers are saved automatically.

Remaining Time: 53 minutes, 41 seconds.

⌄ Question Completion Status:

⚠ Moving to another question will save this response.

Question 17

The terms in the k-map are arranged monotonically (in an increasing order of value).
- ○ True
- ○ False

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 = 5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test. Your answers are saved automatically.

Remaining Time: 53 minutes, 34 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 18

"Using odd parity for error detection the value of X in (0010 1110 1011 110X) should be 0."

○ True
○ False

⚠ Moving to another question will save this response.

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Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Remaining Time: 53 minutes, 26 seconds.

⬇ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 19

Which of the following is not a Boolean algebra property?

- ○ a + (b * c) =(a + b) *(a + c)
- ○ 1 * a =a * 1 =a
- ○ (ab)' = a' + b'
- ○ a*(b+c)=(a+b)*(a+c)

⚠ Moving to another question will save this response.

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
	Total : 25 marks

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Your answers are saved automatically.

Remaining Time: 53 minutes, 15 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 20

Which of the following is considered a universal gate?

- ○ NOR
- ○ XOR
- ○ OR
- ○ XNOR

⚠ Moving to another question will save this response.

Timed Test
Multiple Attempts Not allowed. This test can only be taken once.
Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave them.
Your answers are saved automatically.

- Cheating is strictly prohibited
This test has a time limit of 1 hour. This test
Warnings appear when **half the time, 5 minutes, 1 minute** and 30 seconds remain.

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Remaining Time: 52 minutes, 47 seconds.

⌄ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 21

In this k-map all the following are considered adjacent except _____

m_0	m_1	m_3	m_2
m_4	m_5	m_7	m_6

○ "m2, m4"

○ "m2, m4, m0, m6"

○ "m0,m1,m2,m3"

○ "m4, m6"

⚠ Moving to another question will save this response.

HUAWEI

Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
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Remaining Time: 52 minutes, 08 seconds.

⯆ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 22

The complement of a function expressed as the sum of minterms equals the sum of minterms missing from the original function.

○ True
○ False

Timed Test

- Cheating is strictly prohibited

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Warnings appear when **half the time, 5 minutes, 1 minute**, and **30 seconds** remain.

Multiple Attempts Not allowed. This test can only be taken once.

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.

Your answers are saved automatically.

Remaining Time: 51 minutes, 48 seconds.

⚡ **Question Completion Status:**

⚠ Moving to another question will save this response.

Question 23

Write down the minterms m5 and m7 in a 3 variables Boolean expression (x, y, z). Simplify the boolean expression F=(m5+m7) by using the basic theorems and postulates of boolean algebra.
(don't use the K.Map simplification).

x\yz	00	01	11	10
0	m0	m1	m3	m2
1	m4	m5	m7	m6

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph   Arial   10pt

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Marking Scheme

Questions Type	Number of questions
MCQ	10 (10x0.5 =5 marks)
T/F	10 (10x0.5=5 marks)
Essay	5 (5*3=15 marks)
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Remaining Time: 51 minutes, 09 seconds.

Question Completion Status:

⚠ Moving to another question will save this response.

Question 24

Using even parity scheme for error detection which of the following is having an error?
- ○ 10110100
- ○ 11101010
- ○ 11100111
- ○ 10101010

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You are being supervised

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Question 25

Use K-map to simplify the following function with don't care conditions: $F(x, y, z) = \sum(0, 1, 4, 5, 6)$; $d(x, y, z) = \sum(2, 3)$

x\yz	00	01	11	10
0	m0 (1)	m1 (1)	m3 (x)	m2 (x)
1	m4 (1)	m5 (1)	m7	m6 (1)

- Formulate the groups and give their simplified Boolean expression.
- Write the final simplified Boolean expression.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph · Arial · 10pt

B *I* U S

P

Click **Submit** to complete this assessment.

Any Boolean function can be implemented using XOR function.
○ True
○ False

False

The complement of a function expressed as the sum of minterms equals the sum of minterms missing from the original function.
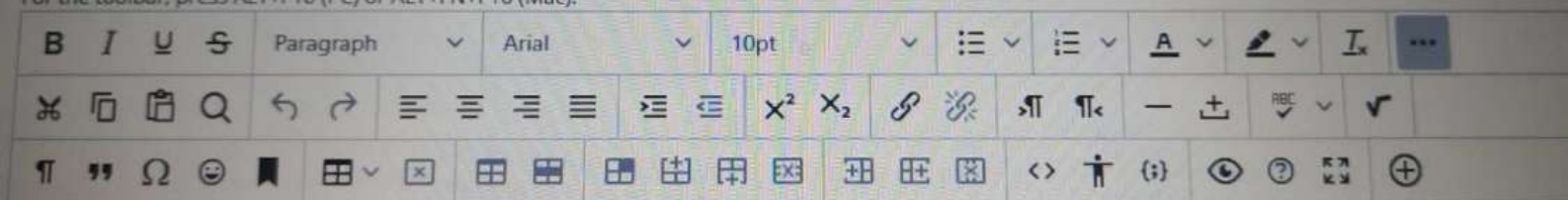
O True

O False

True

Write down the minterms m5 and m7 in a 3 variables Boolean expression (x, y, z). Simplify the boolean expression F=(m5+m7) by using the basic theorems and postulates of Boolean Algebra (don't use the K.Map simplification).

x\yz	00	01	11	10
0	m0	m1	m3	m2
1	m4	m5	m7	m6

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

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مقالي

?Using even parity scheme for error detection which of the following is having an error

10110100 ○
11101010 ○
11100111 ○
10101010 ○
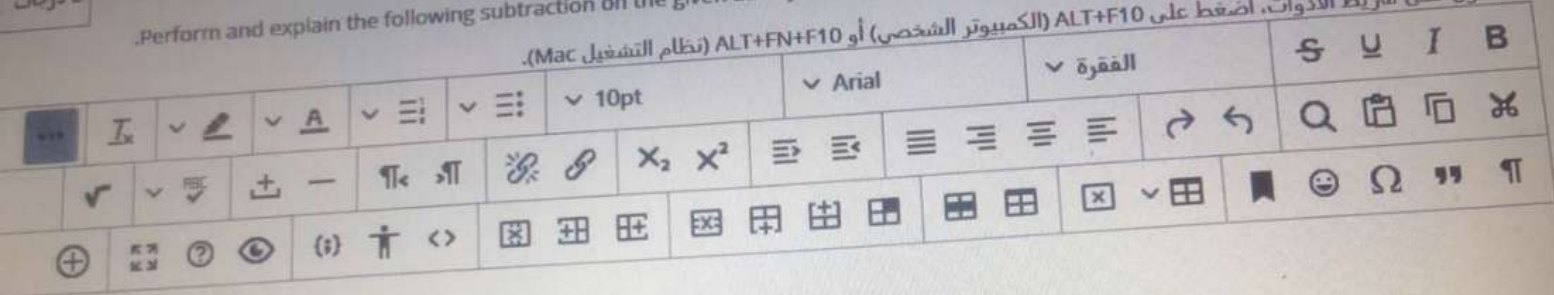
C

"After applying the adequate theorems, the simplified expression of F= X'Y'Z + X'YZ + XY'Z + XYZ is _____."

○ X'Z+XZ

○ Y'(X'Z) + Y(X'Z) + Y'(XZ) + Y(XZ)

○ YZ' + XZ

○ Z

D

3 درجات

Perform and explain the following subtraction on the given binary numbers using the 2 s complement of the subtrahend 10011-10010.

للحصول على شريط الأدوات، اضغط على ALT+F10 (الكمبيوتر الشخصي) أو ALT+FN+F10 (نظام التشغيل Mac).

الفقرة ✓	Arial ✓	10pt ✓

B I U S

مقالي

In this k-map all the following are considered adjacent except _____.

m_0	m_1	m_3	m_2
m_4	m_5	m_7	m_6

A

○ "m2, m4"

○ "m2, m4, m0, m6"

○ "m0,m1,m2,m3"

○ "m4, m6"

The K-map for a function with 3 variables contains _____.
- ○ 3 squares
- ○ 6 squares
- ○ 8 squares
- ○ 9 squares

C

Describe 2 ways of simplifying a Boolean expression described in a truth table.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

مقالي

.Adjacency between cells in K-maps is related to grey code

O صواب

O خطأ

True

يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد. ⚠

The value of conversion of (0.6875) in base 10 to binary is _____.

○ (1011)

○ (1101)

○ (0.1011)   C

○ (0.1101)

" .The decimal number 326 is represented in BCD with 9 bits, 011 010 110, with each group of three bits representing one decimal digit"

صواب ○
خطأ ○

False

⚠ يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد.

السؤال 20

Use K-map to simplify the following function with don't care conditions: $F(x, y, z) = \sum(0, 1, 4, 5, 6)$; $d(x, y, z) = \sum(2, 3)$

10	11	01	00	x\yz
m2 (x)	m3 (x)	m1 (1)	m0 (1)	0
m6 (1)	m7	m5 (1)	m4 (1)	1

- Formulate the groups and give their simplified Boolean expression.
- Write the final simplified Boolean expression.

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¶< >¶   ✂ 🔗   X₂ X²   ⇛ ⇚   ≡ ≡ ≡ ≡   ↪ ↩   Q 📋 📄 ✄

مقالي

.The terms in the k-map are arranged monotonically (in an increasing order of value)

○ صواب
○ خطأ

True

3 درجات
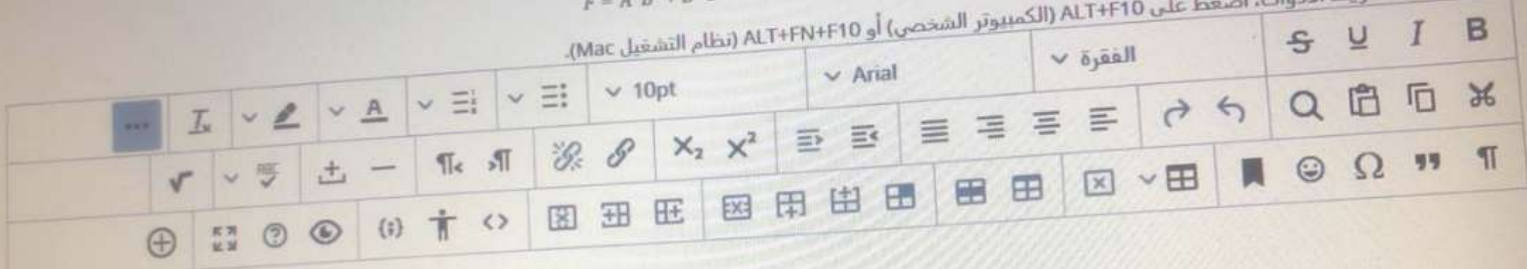
Using Boolean Algebraic manipulations, minimize the following function to minimum number of literals in sum of products representation. Show your work clearly step by step indicating the used properties of Boolean Algebra:

$$F = A'B' + B'C + AB'C' + AB$$

للحصول على شريط الأدوات، اضغط على ALT+F10 (الكمبيوتر الشخصي) أو ALT+FN+F10 (نظام التشغيل Mac).

مقالي

$.X \oplus Y = XY' + X'Y$ which means X or Y but not both

○ صواب
○ خطأ

True

?Which of the following is considered a universal gate

NOR ○
XOR ○
OR ○
XNOR ○

NOR

"Using odd parity for error detection the value of X in (0010 1110 1011 110X) should be 0."

○ True

○ False

True

⚠ Moving to another question will save this response.

".(.) This establishes the two identity elements, 1 for (+) and 0 for"

O صواب
O خطأ

True

↵ ⚠ يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد.

Using Boolean Algebraic manipulations, minimize the following function to minimum number of literals in sum of products representation. Show your work
clearly step by step indicating the used properties of Boolean Algebra:

3 points

$$F = A'B' + B'C + AB'C' + AB$$

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

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مقالي

_____ is the compliment of the function: $f = a'bc' + a'b'c$.

○ $(a' + b' + c')(a' + b' + c')$

○ $(a + b' + c)(a + b + c')$

○ $(a b'c) + (a b c')$

○ $(a b'c)(a + b + c')$

.The complexity of the logic gate level design depends on the complexity of the Boolean expression

○ صواب

○ خطأ

True

⚠ يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد.

Question 4

Which of the following is not a Boolean algebra property?

○ a + (b * c) = (a + b) * (a + c)
○ 1 * a = a * 1 = a
○ (ab)' = a' + b'
○ a*(b+c)=(a+b)*(a+c)

D

⚠ Moving to another question will save this response.

Question 4 of 25

السؤال 2

Using 0s in K-map for the function F will result in _____.
- sum of product of F ○
- product of sum of F ○
- sum of product of the complement of F ○
- product of sum of the complement of F ○

D

Activa
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← ⚠ يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد.

.Literal is a single variable within a term that may or may not be complemented

○ صواب

○ خطأ

True

⚠ يقوم الانتقال إلى سؤال آخر بحفظ هذا الرد.

السؤال 4

"Which of the following Boolean equations is in the form of product of maxterms of the function F(A,B,C)?"

$F = (A'B C) (A B C') (A B C)$ ○

$F = (A'+ B + C') (A' + C) (A + B' + C)$ ○

$F = (A + B + C) (A' + B + C) (A + B' + C)$ ○

$'F = A B' C + A' BC' + A' B' C$ ○

C

Acti
Go t